

**REMARKS**

Applicants thank the Examiner and his supervisor for the helpful discussion and courtesy shown during the interview held at the U.S. PTO on July 6, 2006.

Claims 1-20 are all the claims pending in the application; claims 7, 8, 11 and 13 have been withdrawn from consideration, claims 1-6, 9, 10, 14-20 are rejected, and claim 12 is objected to.

While the Examiner did not include claims 18 and 20 in the summary of the claims on the Office Action Summary sheet, as these claims depend from rejected claims 2 and 3, it appears that the Examiner intended to include claims 18 and 20 among the rejected claims.

Upon entry of this amendment, claims 1-20 will be canceled, claims 21-37 will be added, and claims 21-37 will be pending.

Support for new claims 21-37 may be found in the specification as follows.

**Claim 21** - the method of detecting variations in at least two positions of a glaucoma-related gene is described at page 4, line 5-8; the glaucoma-related gene is described as the MYOC gene of SEQ ID NO:1 at page 4, lines 9-12; the specific variations in SEQ ID NO:1 that may be detected are described at page 8, lines 2-9.

**Claim 22** - the specific variations at positions 4037 and 4346 are described at page 22, lines 3-5. See also page 4, lines 15-23, and at page 8, lines 2-9.

**Claims 23-24** - the specific variations at positions 194, 199, 324, 1051, 1084, 1627, 1685, 1756, 1853, 2830 and 3371 (in conjunctions with positions 4037 and 4346 of claim 22) are described at page 8, line 23, through page 9, line 2.

**Claim 25** - the specific variations at positions 194, 1084 and 1627 are described at page 22, lines 14-19. See also page 4, lines 15-23, and at page 8, lines 2-9.

**Claims 26-28** - the specific variations at positions 4037 and 4346 are described at page 22, lines 3-5. See also page 4, lines 15-23, and at page 8, lines 2-9.

**Claim 29** - the selection of variations as between substitutions, insertions and deletions is described at page 4, lines 13-14, and at page 8, lines 2-5.

**Claim 30** - the specific substitution is described at page 8, lines 16-17.

**Claim 31** - the specific substitution is described at page 8, lines 17-18.

**Claims 32-33** - the specific substitutions are described at page 8, lines 10-18.

**Claim 34** - the detection of a third variation is described at page 10, lines 10-14.

**Claim 35** - the types of glaucoma are described at page 5, lines 19-20.

**Claim 36** - the use of a hybridizing oligonucleotide is described at page 5, lines 21-24.

**Claim 37** - the manner in which the detecting is performed is described at page 5, line 25 through page 6, line 18; page 11, lines 5-11; page 12, line 24 through page 14, line 9.

The location in SEQ ID NO:1 to which the primers recited in claim 37 correspond is shown in the Appendix filed herewith.

No new matter has been added. Entry of the Amendment is respectfully requested.

## I. Formal Matters

As the Examiner has not yet acknowledged receipt of the certified copy of the priority document or Applicants' claim to foreign priority, Applicants respectfully request the Examiner to acknowledge receipt of the document and Applicants' claim in the next paper issued by the U.S. PTO.

## II. Claim Objections

At page 3 of the Office Action, claim 12 is objected to for improperly depending from two different claims.

The instant Amendment includes the cancellation of claim 12, thus making this objection moot. None of the new claims included in the instant Amendment include an improper dependency of the type noted by the Examiner in claim 12.

In view of the cancellation of claim 12, Applicants respectfully request reconsideration and withdrawal of this objection.

**III. Claim Rejections - 35 U.S.C. §101**

At page 3 of the Office Action, claims 1-6, 9, 14-17 and 19 are rejected as being drawn to non-statutory subject matter under 35 U.S.C. §101.

The Examiner states that because the cited claims do not recite either a physical transformation of matter or a practical application, the claims are not directed to statutory subject matter.

The instant Amendment includes the cancellation of each of the rejected claims, thus making this rejection moot. Each of new claims 21-37 recites a method for determining a risk of glaucoma in a subject, and are thus directed to statutory subject matter.

In view of the cancellation of claim 1-6, 9, 14-17 and 19, Applicants respectfully request reconsideration and withdrawal of this rejection.

**IV. Claim Rejections - 35 U.S.C. §102**

**A.** At page 4 of the Office Action, claims 1, 4, 9 and 10 are rejected under 35 U.S.C. §102(e) as being anticipated by Sarfarazi et al. (US 2004/0191798, Dec. 24, 2001).

Briefly, the Examiner states that Sarfarazi teaches methods of detection, prognosis and diagnosis of the presence or absence of optineurin-associated glaucoma or of an optineurin-associated increased risk of glaucoma through the detection of sequence alterations in the optineurin gene.

The instant Amendment includes the cancellation of each of the rejected claims, thus making this rejection moot. In view of the cancellation of claim 1, 4, 9 and 10, Applicants respectfully request reconsideration and withdrawal of this rejection.

Applicants note that each of new claims 21-37 recites a method for determining a risk of glaucoma in a subject by detecting variations in the polynucleotide sequence set forth in SEQ ID NO:1. The polynucleotide of SEQ ID NO:1 encodes the myocilin gene. In contrast, Sarfarazi teaches methods that utilize the gene encoding optineurin (see, e.g., paragraph [0005]), a

completely different gene. As such, Sarfarazi does not teach each and every element of new claims 21-37, and should not be considered to anticipate new claims 21-37.

**B.** At page 5 of the Office Action, claims 1, 2, 4, 9 and 10 are rejected under 35 U.S.C. §102(e) as being anticipated by Stone et al. (US Patent No. 6,956,103).

Briefly, the Examiner states that Stone teaches methods for detecting mutations in genes that correlate with the existence or predisposition to the development of glaucoma, including detecting the presence or absence of genetic alternations of genes encoding myocilin.

The instant Amendment includes the cancellation of each of the rejected claims, thus making this rejection moot. In view of the cancellation of claim 1, 4, 9 and 10, Applicants respectfully request reconsideration and withdrawal of this rejection.

Each of new claims 21-37 recites a method for determining a risk of glaucoma in a subject by detecting variations in the polynucleotide sequence set forth in SEQ ID NO:1. The locations of the variations are recited in the new claims. Stone does not teach a method for determining a risk of glaucoma by detecting any of the variations recited in new claims 21-37.

Applicants enclosed an Appendix herewith that shows the location of the variations recited in new claims 21-37, and those that are disclosed in Stone. Each of the variations recited in new claims 21-37 is marked with the letter “A”. Each of the variations of Stone is marked with the letter “D”. Stone does not teach any of the variations recited in new claims 21-37. As such, Stone does not teach each and every element of new claims 21-37, and should not be considered to anticipate new claims 21-37.

#### **V. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. §1.111  
U.S. Appln. No. 10/509,595

Q83447

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: August 17, 2006

APPENDIXAlignment  
Page 1 of 8

10/509, 595

Sequence 1: US2005/0170353 (SEQ ID NO:1)  
Sequence 2: USP6956103 (SEQ ID NO:1)6000 bp  
2800 bp

## Note:

- "A" indicates the positions of a variation defined in the amended claims.
- "B" indicates the starting or ending point of the sequence overlapping.
- "C" indicates the starting or ending point of Exon 1.
- "D" indicates the location of the frame encoding the amino acid where an amino acid mutation could be detected. Mutations are disclosed in figure 3 of US 6956103 (Stone et al). The numbers in parentheses indicate the locations in SEQ ID NO: 1 of US 6956103.
- "\*" means that the nucleotides of the sequences are the same.
- "-" means that there is no nucleotide to be aligned.

		SEQ ID NO: 2
US2005/0170353		GCTCCACAGGAAGTCTCCCCACTCTAGACTTCTGCATCACGATGTTACAGCCAGAGCTC
USP6956103		-----
US2005/0170353		CGTGAGGGTGAGGGTCTGTGTCTTACACCTACCTGTATGCTCTACACCTGAGCTCACTGC
USP6956103		-----
US2005/0170353		AACCTCTGCCCTCCCAGGTTCAAGCAATTCTCTGTCTCAGCCTCCCGTAGCTGGGACT
USP6956103		-----
US2005/0170353	194      199	
USP6956103	A      A	ACAGGCGCACGCC <b>C</b> GGCT <b>A</b> TTTTGTATTGTTAGAGATGGGTTTCACCATAATTAG
US2005/0170353		-----
USP6956103		CCCGGCTGGTCTTGAACTCCTGACCTCAGGTGATCCACCCACCTCAGCCTCCTAAAGTGC
US2005/0170353		-----
USP6956103	<b>A</b> 324	TGGGATTACAGGCATGAGTCACC <b>G</b> CGCCCGGCCAAGGGTCAGTGTAAATAAGGAATAAC
US2005/0170353		-----
		SEQ ID NO: 4
US2005/0170353		TGGAATGGTTACTAACCAACAGGGAAACAGACAAAAGCTGTGATAATTCAAGGGATTC
USP6956103		-----
US2005/0170353		SEQ ID NO: 27
USP6956103		TTGGGATGGGAATGGTGCCTAGAGCTGCCTGCTAGTCCCAGACCACTGGCCTCATCA
US2005/0170353		-----
USP6956103		CTTTCTCCCTCATCCTCATTTCAAGGCTAAGTTACCAATTATTACCATGCTTTGTG
US2005/0170353		-----
USP6956103		GTAAGCCTCCACATCGTTACTGAAATAAGAGTATAACATAAACTAGTTCCATTGGGGCCA
US2005/0170353		-----

US2005/0170353 TCTGTGTGTGTATAGGGAGGGCATACCCAGAGACTCCTGAAGCCCCGGCAG  
USP6956103 -----

US2005/0170353 AGGTTTCCTCTCCAGCTGGGGAGCCCTGCAAGCACCCGGGTCTGGGTGTCCTGAGCA  
USP6956103 -----

US2005/0170353 ACCTGCCAGCCCGTGCCACTGGTTGTTTGTATCACTCTAGGGACCTGTTGCTTCT  
USP6956103 -----

US2005/0170353 ATTTCTGTGTGACTCGTCATTCCAGGCATTGACAATTATTGAGTACTTATA  
USP6956103 -----

US2005/0170353 TCTGCCAGACACCAGAGACAAAATGGTGAGCAAAGCAGTCACTGCCCTACCTCGTGGAG  
USP6956103 -----

US2005/0170353 GTGACAGTTCTCATGGAAGACGTGCAGAAGAAAATTAAAGCCAGCCAACCTAACCCCA  
USP6956103 -----

US2005/0170353 GTGCTGAAAGAAAGGAAATAAACACCATCTTGAAGAATTGTGCGCAGCATCCCTAACAA  
USP6956103 -----

1051  
A  
US2005/0170353 GGCCACCTCCCTAGCGCCCCCTGCTGCCTC~~C~~ATCGTGCCGGAGGCCCCAAGCCCGAGT  
USP6956103 -----

1084  
A SEQ ID NO: 6  
US2005/0170353 CTT~~C~~AAAGCCTCCCTCCATCAGTCACAGCGCTGCAGCTGGCTGCCTCGCTCCGTG  
USP6956103 -----

SEQ ID NO: 25  
US2005/0170353 AATCGTCCTGGTGCATCTGAGCTGGAGACTCCTGGCTCCAGGCTCCAGAAAGGAAATGG  
USP6956103 -----

US2005/0170353 AGAGGGAAACTAGTCTAACGGAGAATCTGGAGGGACAGTGTTCCTCAGAGGGAAAGGG  
USP6956103 -----

US2005/0170353 GCCTCCACGTCCAGGAGAATTCCAGGAGGTGGGACTGCAGGGAGTGGGACGCTGGGC  
USP6956103 -----

US2005/0170353 TGAGCGGGTGTGAAAGGCAGGAAGGTGAAAGGGCAAGGCTGAAGCTGCCAGATGTT  
USP6956103 -----

US2005/0170353 AGTGTGTTCACGGGGCTGGAGTTTCCGTTGCTCCTGTGAGCCTTTATCTTTCT  
USP6956103 -----

SEQ ID NO: 7  
US2005/0170353 CTGCTTGGAGGAGAAGAAGTCTATTCATGAAGGGATGCAGTTCATAAAGTCAGCTGTT  
USP6956103 -----

SEQ ID NO: 24

US2005/0170353 AAAATTCCAGGGTGTGCATGGGTTTCCTCACGAAGGCCATTATTAATGGGAATATAG  
USP6956103 -----

US2005/0170353 GAAGCGAGCTCATTCTAGGCCGTTAACGGAAGAAGTGACTGGAGCTTTCTTT  
USP6956103 -----

1627

**A**

US2005/0170353 CATGTC~~T~~CTGGCAACTACTCAGCCCTGTGGTGGACTTGGCTATGCAAGACGGTCGAA  
USP6956103 -----

1685

**A**

US2005/0170353 AACCT~~T~~GGAATCAGGAGACTCGGTTCTTCTGGTCTGCCATTGGTGGCTGTGCGAC  
USP6956103 -----

1756

**A**

SEQ ID NO: 8

US2005/0170353 CGTGGCAAGTGTCT~~C~~TCCCTCCCTGGCCATAGTCTCTGCTATAAGACCCCTGCA  
USP6956103 -----

1853

**A**

US2005/0170353 SEQ ID NO: 8 → GCTCTCGTGTCTGTGAAACACTTCCCTGTGATTCTCTGTGAGGGGGATGTT~~G~~AGAGGGG  
USP6956103 -----

US2005/0170353 AAGGAGGCAGAGCTGGAGCAGCTGAGCCACAGGGAGGTGGAGGGGGACAGGAAGGCAGG  
USP6956103 -----

SEQ ID NO: 23

US2005/0170353 CAGAACGCTGGTGCTCCATCAGTCCTCACTGATCACGTCAGACTCCAGGACCGAGGCCA  
USP6956103 -----

US2005/0170353 CAATGCTTCAGGAAAGCTCAATGAACCCAACAGCCACATTTCTCCCTAACCATAGAC  
USP6956103 -----

US2005/0170353 AATGGCATTGCCAATAACCAAAAAGAATGCAGAGACTAACTGGTGGTAGCTTGCCTG  
USP6956103 -----

SEQ ID NO: 9

US2005/0170353 GCATTCAAAACTGGGCCAGAGCAAGTGGAAATGCCAGAGATTGTAAACCTTTCACCC  
USP6956103 -----

2216

**B**

US2005/0170353 SEQ ID NO: 9 → TGACCAGCCCCACGCAGCTCAGCAGTGACTGCTGACAGCACGGAGTGACCTGCA~~G~~CGC  
USP6956103 -----  
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SEQ ID NO: 22

US2005/0170353 AGGGGAGGAGAAGAAAAGAGGGATAGTGTATGAGCAAGAAAGACAGATTCAAG  
USP6956103 AGGGGAGGAGAAGAAA-GAGAGGGATAGTGTATGAGCAAGAAAGACAGATTCAAG  
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US2005/0170353 GGCAGTGGGAATTGACCACAGGGATTATAGTCCACGTGATCCTGGGTCTAGGAGGCAGG  
USP6956103 GGCAGTGGGAATTGACCACAGGGATTATAGTCCACGTGATCCTGGGTCTAGGAGGCAGG  
\*\*\*\*\*

US2005/0170353 GCTATATTGTGGGGGAAAAAATCAGTTCAAGGGAAGTCGGGAGACCTGATTCTAAATAC  
USP6956103 GCTATATTGTGGGGGAAAAAATCAGTTCAAGGGAAGTCGGGAGACCTGATTCTAAATAC  
\*\*\*\*\*  
  
US2005/0170353 TATATTTTCTTACAAGCTGAGTAATTCTGAGCAAGTCACAAGGAGTAGTAACGTGAGGCT  
USP6956103 TATATTTTCTTACAAGCTGAGTAATTCTGAGCAAGTCACAAGGAGTAGTAACGTGAGGCT  
\*\*\*\*\*  
  
US2005/0170353 SEQ ID NO: 10  
USP6956103 GTAAGATTACTTAGTTCTCCTTATTAGGAACCTTTCTCTGTGGAGTTAGCAGCAC  
GTAAGATTACTTAGTTCTCCTTATTAGGAACCTTTCTCTGTGGAGTTAGCAGCAC  
\*\*\*\*\*  
  
US2005/0170353 SEQ ID NO: 21  
USP6956103 AGGGCAATCCCGTTCTTTAACAGGAAGAACATTCTAACAGAGTAAAGCCAACAGAT  
AGGGCAATCCCGTTCTTTAACAGGAAGAACATTCTAACAGAGTAAAGCCAACAGAT  
\*\*\*\*\*  
  
US2005/0170353 SEQ ID NO: 21  
USP6956103 TCAAGCCTAGGTCTTGTGACTATATGATTGGTTTGAAAATCATTCAGCGATGTT  
TCAAGCCTAGGTCTTGTGACTATATGATTGGTTTGAAAATCATTCAGCGATGTT  
\*\*\*\*\*  
  
US2005/0170353 TACTATCTGATTTCAGAAAATGAGACTAGTACCCCTTGGTCAGCTGTAAACAAACACCCAT  
USP6956103 TACTATCTGATTTCAGAAAATGAGACTAGTACCCCTTGGTCAGCTGTAAACAAACACCCAT  
\*\*\*\*\*  
  
US2005/0170353 TTGTAAATGTCTCAAGTTCAGGCTTAAC TG CAG AAC CA A TA AG A AT AG A AT CTTT  
USP6956103 TTGTAAATGTCTCAAGTTCAGGCTTAAC TG CAG AAC CA A TA AG A AT AG A AT CTTT  
\*\*\*\*\*  
  
US2005/0170353 AGAGCAAATGTGTTCTCAACTCTGGAGGTGAGTCTGCCAGGGCAGTTGGAAATATTT  
USP6956103 AGAGCAAATGTGTTCTCAACTCTGGAGGTGAGTCTGCCAGGGCAGTTGGAAATATTT  
\*\*\*\*\*  
  
2830  
A  
US2005/0170353 SEQ ID NO: 11  
USP6956103 AC TT CAC AA GT ATT GAC ACT GT GT GG T ATT A AC AAC AT AA AG T T G C T C A A A G G C A A T C  
AC TT CAC AA GT ATT GAC ACT GT GT GG T ATT A AC AAC AT AA AG T T G C T C A A A G G C A A T C  
\*\*\*\*\*  
  
US2005/0170353 SEQ ID NO: 20  
USP6956103 ATT ATT TCAAGTGGCTTAAAGTTACTTCTGACAGTTTGTTATTATTATTGGCTATTGCC  
ATT ATT TCAAGTGGCTTAAAGTTACTTCTGACAGTTTGTTATTATTATTGGCTATTGCC  
\*\*\*\*\*  
  
US2005/0170353 SEQ ID NO: 20  
USP6956103 ATT TGCTTTTGT TTTCTCTTGGTTATTAAATGTAAAGCAGGGATTATTAAACCTAC  
ATT TGCTTTTGT TTTCTCTTGGTTATTAAATGTAAAGCAGGGATTATTAAACCTAC  
\*\*\*\*\*  
  
US2005/0170353 AGTCCAGAAAGCCTGTGAATTGAATGAGGAAAAATTACATTTGTTTACCAACCTT  
USP6956103 AGTCCAGAAAGCCTGTGAATTGAATGAGGAAAAATTACATTTGTTTACCAACCTT  
\*\*\*\*\*  
  
US2005/0170353 CTAACATAACATTATTCCATTGCGAATAGAGCCATAAACTCAAAGTGGTAATA  
USP6956103 CTAACATAACATTATTCCATTGCGAATAGAGCCATAAACTCAAAGTGGTAATA  
\*\*\*\*\*  
  
US2005/0170353 ACAGTACCTGTGATTTGTCATTACCAATAGAAATCACAGACATTTATACTATATTACA  
USP6956103 ACAGTACCTGTGATTTGTCATTACCAATAGAAATCACAGACATTTATACTATATTACA  
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4037

SEQ ID NO: 17      **A**  
US2005/0170353      TAAACCTCTGGAGCTC**G**GGCATGCCAGCAAGGCCACCCATCCAGGCACCTCTCAGC  
USP6956103      TAAACCTCTGGAGCTCGGGCATGCCAGCAAGGCCACCCATCCAGGCACCTCTCAGC  
\*\*\*\*\*  
\*\*\*\*\*

4120

**C**

US2005/0170353      ACAGCAGAGCTTCAGAGGAAGCCTCACCAAGCCTCTGCA**A**TGAGGTTCTCTGTGCAC  
USP6956103      ACAGCAGAGCTTCAGAGGAAGCCTCACCAAGCCTCTGCA**A**TGAGGTTCTCTGTGCAC  
\*\*\*\*\*  
**(Beginning of Exon 1)**

**D(1960-1962)**

US2005/0170353      GTTGCTGCAGCTTGGCCTGAGATGCCAGCTGTCAGCTGCTGCTCTGGCCTGCCCTGG  
USP6956103      GTTGCTGCAGCTTGGCCTGAGATGCCAGCTGTC**A**CTGCTGCTCTGGCCTGCCCTGG  
\*\*\*\*\*

US2005/0170353      TGTGGGATGTGGGGCCAGGACAGCTCAGCTCAGGAAGCCAATGACCAGAGTGGCCGAT  
USP6956103      TGTGGGATGTGGGGCCAGGACAGCTCAGCTCAGGAAGCCAATGACCAGAGTGGCCGAT  
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US2005/0170353      GCCAGTATACTTCAGTGTGCCAGTCCAAATGAATCCAGCTGCCAGAGCAGAGCAGGCCAGG  
USP6956103      GCCAGTATACTTCAGTGTGCCAGTCCAAATGAATCCAGCTGCCAGAGCAGAGCAGGCCAGG  
\*\*\*\*\*

4346

SEQ ID NO: 16      **A**      **D(2149-2151)**  
US2005/0170353      CCATGTCAGTCATCCATAACTTACAGA**G**AGACAGCAGCACCAACGCTTAGACCTGGAGG  
USP6956103      CCATGTCAGTCATCCATAACTTACAGAGAGACAGCAGCACCAAC**G**CTTAGACCTGGAGG  
\*\*\*\*\*

US2005/0170353      CCACCAAAGCTCGACTCAGCTCCCTGGAGAGGCCCTCCACCAATTGACCTTGACCAGG  
USP6956103      CCACCAAAGCTCGACTCAGCTCCCTGGAGAGGCCCTCCACCAATTGACCTTGACCAGG  
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US2005/0170353      CTGCCAGGCCCAAGGAGACCCAGGGAGGGCTGCAGAGGGAGCTGGCACCCCTGAGGCGGG  
USP6956103      CTGCCAGGCCCAAGGAGACCCAGGGAGGGCTGCAGAGGGAGCTGGCACCCCTGAGGCGGG  
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US2005/0170353      AGCGGGACCAGCTGGAAACCCAAACCCAGAGAGTTGGAGACTGCCTACAGCAACCTCCTCC  
USP6956103      AGCGGGACCAGCTGGAAACCCAAACCCAGAGAGTTGGAGACTGCCTACAGCAACCTCCTCC  
\*\*\*\*\*

US2005/0170353      GAGACAAGTCAGTTCTGGAGGAAGAGAAGAAGCAGTAAGGCAAGAAAATGAGAATCTGG  
USP6956103      GAGACAAGTCAGTTCTGGAGGAAGAGAAGAAGCAGTAAGGCAAGAAAATGAGAATCTGG  
\*\*\*\*\*

US2005/0170353      CCAGGAGGTGGAAAGCAGCAGCCAGGAGGTAGCAAGGCTGAGAAGGGGCCAGTGTCCCC  
USP6956103      CCAGGAGGTGGAAAGCAGCAGCCAGGAGGTAGCAAGGCTGAGAAGGGGCCAGTGTCCCC  
\*\*\*\*\*

SEQ ID NO: 15

**C**

US2005/0170353      AGACCCGAGACACTGCTCGGGCTGTGCCACCAGGCTCCAGAGA**A**GGTAAGAATGCAGAGT  
USP6956103      AGACCCGAGACACTGCTCGGGCTGTGCCACCAGGCTCCAGAGA**A**GGTAAGAATGCAGAGT  
\*\*\*\*\*

**(End of Exon 1)**

US2005/0170353      GGGGGGACTCTGAGTTCAGCAGGTGATATGGCTCGTAGTGACCTGCTACAGGCCTCCAG  
USP6956103      GGGGGGACTCTGAGTTCAGCAGGTGATATGGCTCGTAGTGACCTGCTACAGGCCTCCAG  
\*\*\*\*\*

US2005/0170353 GCCTCCCTGCCCTGCCCTTCTCCTAGAGACTGCACAGCTAGCACAAGACAGATGAATTAA  
USP6956103 GCCTCCCTGCCCTGCCCTTCTCCTAGAGACTGCACAGCTAGCACAAGACAGATGAATTAA  
\*\*\*\*\*  
  
US2005/0170353 GGAAAGCACAGCGATCACCTCAAGTATTACTAGTAATTAGCTCTGAGAGCTTCATTT  
USP6956103 GGAAAGCACAGCGATCACCTCAAGTATTACTAGTAATTAGCTCTGAGAGCTTCATTT  
\*\*\*\*\*  
  
US2005/0170353 AGATTAGTGGTTCAGAGTTCTTGTGCCCTCCATGTCAGTTTCACAGTCCATAGCAAAA  
USP6956103 AGATTAGTGGTTCAGAGTTCTTGTGCCCTCCATGTCAGTTTCACAGTCCATAGCAAAA  
\*\*\*\*\*  
  
US2005/0170353 **B** GGAGAAATAAAAGGACCGGGTGAGATGTGTCTGCATATGAGCAGTAGAAAGTTGTCAATT  
USP6956103 GGAGAAATAAAAGGACCGGGTGAGATGTGTCTGCAT-----  
\*\*\*\*\*  
  
US2005/0170353 GTCCCTTTGAAAAACTATCCTTTTGAAACCTTGCTCAGATTGTTATTGTACCTTT  
USP6956103 -----  
  
US2005/0170353 GATGTTAAAATGACCTTATTATGAAATTACAATAGATTGGGAAATGATAATAAGTGG  
USP6956103 -----  
  
US2005/0170353 TAAGTTTTGTTATTAAATGTTCTTCCCTGGCAAATAAAGAGATGGCACCTCTCT  
USP6956103 -----  
  
US2005/0170353 GTCAGTTCTTAATATGTTGTTCTGAAAGTTCTTACTCAGTCCAATCTGAGAACCTC  
USP6956103 -----  
  
US2005/0170353 TGCTTTAAGTCATCAGACAAATTCTTGAGATGGCTTTCTGAGAGGCTTTGTTCA  
USP6956103 -----  
  
US2005/0170353 TCCTGGTCCCTTCTGCCTAAAGGTGAGTCGTGTGTGGGGGGGTGCGGGGGTGA  
USP6956103 -----  
  
US2005/0170353 GGTGTTGGGGAGGTCTTCTTATTAGCTGGAAAGATGGTATTGTGTCACTTTGAA  
USP6956103 -----  
  
US2005/0170353 AGTGGGCTCCAAATATTCCCTGTTGAGGAAGTGTCTAATCATGAGGAAATAAGCAAGC  
USP6956103 -----  
  
US2005/0170353 AAATCCAGTTGGACAATTAGTTGGACTGGTCAAAGATGTCAGTGCAAGGAAGAAA  
USP6956103 -----  
  
US2005/0170353 GAAAAAAAGGGGTGGGAAGGGCTTGTCTATATTAAAGAGACTAAAGAAATGTGTTAAC  
USP6956103 -----  
  
US2005/0170353 AAATGTAGTGCATGAGTCTTGATTGGTGTCTCATCCAAGGGGAAAAGGCTATGAGGA  
USP6956103 -----

US2005/0170353 ACAGGTTGGGATAACTGAGGCAATTGACTGCTCATTATTATGTTACTGTATTAATGTT  
USP6956103 -----

US2005/0170353 CAGTTTCTTGGTGAGATAATGATACTGTGGTTGCGAAGGATAAAATCTTGTCTCATGGA  
USP6956103 -----

US2005/0170353 GATACATGCTTAAGTACCCAGGGTGAGGCAGTCAGGATGTCAGCAATTGCTCTCAAATGG  
USP6956103 -----

US2005/0170353 TTGAAGAAAGACTGCAAATATATAGATAATGAGAGAAAGAAAGGTAAAACAACGTGGCA  
USP6956103 -----

US2005/0170353 AAATATTAATAACTGGTGAATTACAAACTGGTGAATCTAAGTATATGGGGAGCTTATTGT  
USP6956103 -----

US2005/0170353 AC  
USP6956103 --

SEQ ID NO: 3 ←